BLM LIBRARY
88031081

April 22, 1993

Ecosystem Management

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

DRAFT

Implementation Strategy

QH
75
.A1
E365
1993
c.2

#78205692

~~ID 880 50 24 2~~
ID 880 31081

QH
75
.A1
E365
1993
c.2

TABLE OF CONTENTS

- INTRODUCTION 1
- VISION 2
- EMPLOYEES - THE FIRST CRITICAL ELEMENT 2
  - Training 2
    - Description: 2
    - What Needs to Be Done: 3
    - Action Items: 3
  - Recruitment 3
    - Description: 3
    - What Needs to Be Done: 3
    - Action Item: 3
- ORGANIZATION - THE SECOND CRITICAL ELEMENT 3
  - Planning System 3
    - Description: 3
    - What Needs To Be Done: 4
    - Action Items: 4
  - Budgeting 4
    - Description: 4
    - What Needs To Be Done: 4
    - Action Items: 4
  - Performance Measures 4
    - Description: 4
    - What Needs To Be Done: 5
    - Action Items: 5
  - Program Leader Roles 5
    - Description: 5
    - What Needs To Be Done: 5
    - Action Items: 5
  - Organization 5
    - Description: 5
    - What Needs to Be Done: 5
    - Action Items: 6
- SCIENCE AND DATA - THE THIRD CRITICAL ELEMENT 6
  - Science 6
    - Description: 6
    - What Needs To Be Done: 6
    - Action Item: 6
    - Action Item: 7

BLM LIBRARY
SC-653, BLDG. 50
DENVER FEDERAL CENTER
P. O. BOX 25047
DENVER, CO 80225-0047

Automation/Data 7
  Description: 7
  What Needs To Be Done: 7
  Action Item: 7

IMPLEMENTATION STRUCTURE 7
  Description: 7
  What Needs to be Done: 8
  Action Item: 8
  Action Item: 8
  Action Item: 8
  Action Item: 8

CONSOLIDATION OF IMPLEMENTATION ACTIONS 9

INTRODUCTION

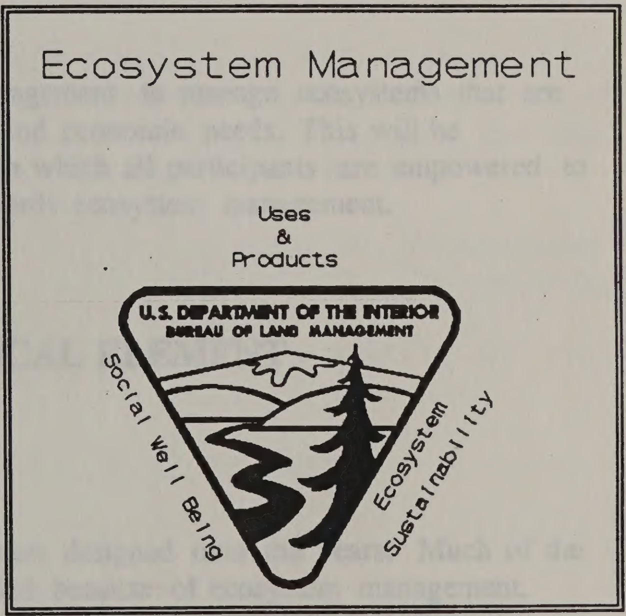
There is a growing recognition, globally, that a fundamentally new approach to natural resource management is needed that takes a less compartmentalized view: An approach which assures that change will sustain the integrity, diversity and productivity of entire ecological systems while continuing to provide resource products, uses, values, and services for present and future needs. This approach is ecosystem management.

This document is the strategy to implement ecosystem management in the Bureau of Land Management. It focuses on goals, objectives, and actions that will cause more detailed implementation plans to be developed throughout the organization.

This strategic plan recognizes that ecosystem management cannot be done from the Washington Office and must be done by all BLM employees. Development of approaches to implement ecosystem management will take executive leadership and participation of all parts of the organization.

We also recognize that ecosystem management is a search, or striving, for land management that produces sustainable products, social well being and ecologically healthy and sustainable biologic systems. Adaptation, modification and change will be required as we learn as an agency.

The bringing together of these 3 elements is ecosystem management.



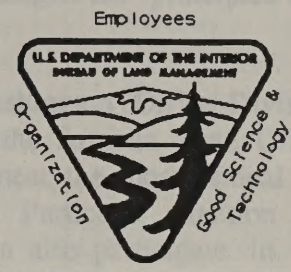
The purpose of this strategic plan is to design an implementation program that brings these 3 elements together so that future decisions about land and people are truly within the concept of ecosystem management.

To be able to implement ecosystem management, BLM must evolve and change. To design change within BLM, there are 3 critical focal points -- employees, science, and organization. Ecosystem management requires employees who cooperate and work with each other and the public, using interdisciplinary science within a facilitating organization.

This implementation plan is designed around these three critical themes.

Employees are a critical element. This includes attitude, willingness to work together, orientation, training, scientific capability, understanding and recruitment.

Science is a critical element. This includes how we support ecosystem management with science, keep our employees scientifically and technically current, relationships with scientific organizations, automation and data.


Employees
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Organization
Good Science & Technology

Critical Elements of Internal Focus to Achieve Ecosystem Management

Organization is a critical element. This includes organization, structure, policy, budgeting, planning and roles.

It is the intent that all activities outlined in this strategic plan will develop proposals that will be further discussed and decided upon by the BMT and the Director.

VISION

It is the Vision for the Bureau of Land Management to manage ecosystems that are sustainable and that meet America's social and economic needs. This will be accomplished by BLM providing a climate in which all participants are empowered to collectively work with common purpose towards ecosystem management.

EMPLOYEES - THE FIRST CRITICAL ELEMENT

Training

Description: BLM has a fine training program designed over the years. Much of the training is technical and need not be modified because of ecosystem management. Recently, more training has been added, including courses on biological diversity, ecosystem management for managers and coordinated interdisciplinary goal setting. Much of this training has been designed by program leadership before the concept of ecosystem management was thought about.

What Needs to Be Done: BLM's training program needs to be comprehensively looked at in light of the new ecosystem management goals. Particular attention needs to be paid to developing more integrated (less program oriented) training, interdisciplinary and team skills, ecological systems, keeping current scientific and interdisciplinary skills, Total Quality Management, project management, ecosystem management principles/concepts, and partnership/public participation.

Action Items: The Phoenix Training Center, selected Washington Office Division Chiefs, Division of Employee Development, and Keith Miller of the Arizona State Office will conduct a training needs analysis and develop a plan to meet the most critical training needs of all organizations and most employees by FY 95. Particular attention should be paid to developing interagency training that the public can also participate in.

Recruitment

Description: BLM has developed staffing patterns and mixes of skills as a result of the program funding, organization processes and the orientation of its historical past. The agency also faces retirement patterns that will create opportunities to design a recruiting program to acquire skills that are in short supply in order to carry out ecosystem management.

What Needs to Be Done: The BLM recruitment program needs to be designed and driven by organizational and scientific needs of the future. A new staffing and skills mix analysis needs to be completed and a follow up recruitment plan be designed from that analysis. Diversity of the work force will be a major goal in this activity.

Action Item: Human Resource Management and the Field Committee should provide leadership to developing staffing requirements and a recruitment plan to be implemented in FY 94.

ORGANIZATION - THE SECOND CRITICAL ELEMENT

Planning System

Description: The BLM planning system (including policy development, Resource Management Plans, and Activity Plans) has had some measure of success. It has produced plans supported by the public. Yet, the system has tended to focus mostly within public land boundaries and operated on a firm time schedule that does not consider the needs of other land holders, ecological needs at the landscape level, and

regional social/economic considerations. The public has been involved mostly in a stiff formal way that does not facilitate sharing of choices with stake holders and tends to create polarization around issues. Although it is not prohibited to cooperatively develop landscape level plans, it is not encouraged in the current system. Those decisions reached in RMPs are guided by functional requirements. Also, many detailed of the decisions are left to activity plans which are driven by functional programs. Functional activity plans have little general opportunity for public involvement and participation in making choices. Plans are often driven by issues rather than the search for integrated goals that sustain ecosystems, maintain social well being and produce products and uses needed by society.

What Needs To Be Done: The planning system needs to be modified to provide for cooperative planning at the landscape level, establishment of ecosystem goals including description of desired future conditions, a full range of public participation at all levels and more coordinated activity planning.

Action Items: Actions are being developed and implemented by the Planning Group for "Reengineering for Quality" and are included in their Implementation Plan.

Budgeting

Description: The current budget system is functionally driven by congressional appropriations processes. It reflects Congress' and interest groups' interest in control of how appropriations are spent. The system as it now exists causes difficulty in funding ecosystem management.

What Needs To Be Done: A new budget process that facilitates funding ecosystem management needs to be developed and discussed with interest groups and Congress that facilitates funding of ecosystem work. The process should accommodate a major emphasis on aggregate funding to address the management of geographically subscribed natural systems and special projects with multiple program emphasis.

Action Items: Actions are being developed and implemented by the Budget Group for "Reengineering for Quality" and are included in their Implementation Plan.

Performance Measures

Description: Currently performance measures for employees and organizational units tend to be items that do not reflect the goals and objectives desired in ecosystem management. Performance measures tend to be expressed in terms of board feet of timber, and animal unit months and other easily countable commodity products.

What Needs To Be Done: We must develop performance measures which relate directly to BLM's evolving emphasis on managing all resources within an ecosystem. BLM policy, ecosystem goals and objectives, RMPs, and implementation plans should incorporate six categories of performance measures: 1) Services and Support; 2) Environmental Quality and Ecosystem Health; 3) Economic Benefits; 4) Social/Cultural Benefits; 5) Special Resource Protection and Management; and, 6) Education.

Action Items: Actions are being developed and implemented by the Performance Measures Group for "Reengineering for Quality" and are included in their Implementation Plan.

Program Leader Roles

Description: The Program Leaders' function in all organizational levels of the BLM was designed to facilitate planning, budgeting, training, evaluation and technical expertise. This system has worked well under a strong functionally oriented organization. This functional orientation does not facilitate ecosystem management and as work planning and budgeting systems change the role of program leaders will need to be modified.

What Needs To Be Done: The responsibilities and roles of employees that serve as Program Leaders need to be changed in appropriate ways that strengthen their interdisciplinary and scientific roles in ecosystem management and decrease functional program focus.

Action Items: Actions are being developed and implemented by the Program Leader Role Group for "Reengineering for Quality" and are included in their Implementation Plan.

Organization

Description: The BLM has an appropriate line/staff organizational structure. Strong decentralization also is appropriate. Ecosystem management will require new organizational behavior that can coordinate across state boundaries and has strong commitment to interdisciplinary goal setting and accomplishments. The organization must be coherently structured so that leaders can hold employees as well as teams accountable for accomplishing goals. New administrative processes and ecosystem concepts may call for some organizational restructuring.

What Needs to Be Done: A review of BLM's organizational structure needs to occur to insure that the organizational design is based on the use of science, will effectively promote the principles of ecosystem management and will foster customer service

through Total Quality Management. Several States are investigating options to accomplish this goal. These efforts should be coordinated and one model developed.

Action Items: The Acting Director should initiate an evaluation of the organization to determine needed modifications. The evaluation should incorporate the results of those States that are in the process of investigating organizational options. No organizational changes should be made until the evaluation of these options is conducted and discussed with the Bureau Management Team and the designated new Director. The leadership of the review should be by the Division of Management Research in the WO with one member of the BMT.

SCIENCE AND DATA - THE THIRD CRITICAL ELEMENT

Science

Description: Ecosystem management needs reliable relevant science which is understandable to the decision makers and the public. The science commonly needed is on landscapes and regional levels which broadens the typically site specific approach currently used. Interdisciplinary science is needed which focuses on ecosystem requirements. Science must identify the needs of a healthy environment and also blend in social, physical, and economic requirements. New information must be generated and compiled to better understand ecological processes and their responses to management actions. Cooperation and coordination with research agencies, the proposed National Biological Survey and other ecosystem efforts must occur and become mutually beneficial. BLM at the present time has several excellent scientific units such as the Coop Units, SC Resources Staff and the Boise Wildlife Staff. These units at the present time do not relate closely with each other and have the potential to help managers in stronger ways under ecosystem management.

What Needs To Be Done: The attached "BLM Science, The Organizational Problem" indicates the structure that needs to be reviewed and analyzed to determine modifications needed to support ecosystem management. This review should take into account the new NBS and consider what BLM needs to develop to facilitate coordination and cooperation with this new organization.

Action Item: A group should be appointed by the acting Director to review existing BLM scientific units in light of ecosystem management and the new NBS. The review should be done with a team composed of a BMT member, representation by Management Research and a representative from each organization containing a scientific organizational unit (WY,SC,ID,OR,AZ,AK). This work can start immediately

but cannot be completed until the details of the NBS are established.

Action Item: A review will be conducted to determine how to integrate and strengthen science into management practices with particular emphasis on peer review and interdisciplinary collaboration. The Lead for this review should be assigned jointly to the BLM Science Advisor, Resource Science Staff SC, a WO Division Chief from 200 and 600.

Automation/Data

Description: The BLM is well along in the process of acquiring a computer system that will be the foundation of a Geographic Information System. Land and mineral records will be the first component. The process of development of national natural resource data standards is in final stages within BLM. Many Field Offices have developed GIS systems. These various systems operate on MOSS software and nonstandard data. The BLM IRM focus has necessarily been on IOC of the new system and the SIP program. Ecosystem management will require a highly capable GIS system with common data standards that operate across a landscape. In landscapes that have land managed by other public agencies, compatibility of data and analytic capability is important.

What Needs To Be Done: A strategy to bring a quality GIS system into operation at the field level in the shortest possible time must be developed. Strengthened coordination of systems and data and transferability of data with Federal and State agencies needs to happen at national and local levels.

Action Item: The IRMRC will provide leadership to the development of a program that results in data standardization/conversion, interagency coordination and implementation of the Bureau GIS system in the west in the shortest possible time.

IMPLEMENTATION STRUCTURE

Description: To properly implement ecosystem management the entire organization must participate. Participation will be initiated by developing implementation plans at all organizational levels.

To assure broad, cross-sectional representation, each State should designate a State Ecosystem Management Coordinator to assist the Bureau's Ecosystem Management Team in assessing the skills, training, and support necessary to effectively implement ecosystem management throughout the Bureau. To adequately conduct this assessment, each State and the WO will also need to designate a Coordinating Team. The composition and size of these teams will vary from state-to-state, but should consist of

state, district, and resource area personnel and represent a broad spectrum of disciplines, including biology, fire management, geology, planning, sociology, and communication. States may want to consider expanding their teams to include other agency representatives.

What Needs to be Done: Based on the Concept Paper each team will conduct an assessment of the skills, training, and support necessary for their State to begin implementing ecosystem management. Some State's have already begun conducting bioregional planning efforts and might be in a better position to get a handle on their particular needs. Others may not and may require assistance in these efforts. To this end, members of the Ecosystem Management Team are available to help facilitate these assessments.

Washington Office Divisions must also develop implementation plans and assess the skills, training, and support necessary for them to begin implementing ecosystem management. The process used by the WO should be the same as the one recommended for State Offices, including involvement of other agencies the assessment of needs and development of an implementation plan. WO and State Office should closely coordinate their actions.

Action Item: IM to SDs and WO Divisions asking them to appoint an Ecosystem Management Coordinator (EMC) and to begin to assess the skills, training, and support necessary to effectively implement ecosystem management. States and WO Divisions will be asked to establish Ecosystem Management Teams to conduct the assessment and to serve as the focal point for future analyses. Issue IM April 9, 1993.

Action Item: Organizational meeting with EMCs in June, 1993, in Washington to coordinate actions and exchange information.

Action Item: Conduct ecosystem management interagency/NonGovernment Organizations conference in first quarter FY 94.

Action Item: Over the next several years, Washington Office Division Chiefs will develop and revise regulations and manuals in order to complete the conversion to ecosystem management.

CONSOLIDATION OF IMPLEMENTATION ACTIONS

ACTION	RESPONSIBLE PARTY	DATE
TRAINING		
Conduct training needs analysis	PTC, Selected WO Division Chiefs, Division of Employee Development, Keith Miller	July 1993
Develop action plan for all organization and employees	PTC, Selected WO Division Chiefs, Division of Employee Development, Keith Miller	August 1993
RECRUITMENT		
Develop staffing requirements	HRM and Field Committee	June 1993
Develop recruitment plan	HRM and Field Committee	August 1993
PLANNING		
Modify planning system	Reengineering for Quality Planning Group	1993-??
BUDGET		
Develop new budget process and discuss with interest groups and Congress	Reengineering for Quality Budget Group	1993-??
PERFORMANCE MEASURES		
Develop performance measures related to ecosystem management	Reengineering for Quality Performance Measures Group	1993-??

ACTION	RESPONSIBLE PARTY	DATE
PROGRAM LEADER ROLES		
Change roles and responsibilities of program leaders	Reengineering for Quality Program Leader Roles Group	
ORGANIZATION		
Decision to initiate evaluation of BLM organization to determine needed changes	Acting Director	May 1993
Conduct evaluation and make recommendations for organization changes	Management Research, Member of BMT	May 1993
SCIENCE		
Decision to initiate review of existing BLM scientific units in light of ecosystem management and new NBS	Acting Director	May 1993
Review existing BLM scientific units as described above	Team composed of BMT member, Management Research representative, representative from each State having scientific unit (WY,SC,ID,OR,AZ,AK)	May 1993
Conduct review on integrating and strengthening science into management practices	BLM Science Advisor, SC Resource Science Staff, WO Division Chief from 200 & 600	June 1993

ACTION	RESPONSIBLE PARTY	DATE
AUTOMATION/DATA		
Develop program that results in data standardization/conversion, interagency coordination and implementation of GIS	IRMRC	June 1993
STATES/WO		
Identify Ecosystem Management Coordinators and Coordinating Teams	State Directors, Assistant Directors, SC, NIFC	May 1993
Coordination Meeting in WO	Director, Assistant Directors, Ecosystem Management Team and State Ecosystem Coordinators	June 1993
Conduct ecosystem management interagency non-government agency conference	ADs, State Directors	First quarter FY94
Revise regulations and manuals	WO Division Chiefs and SC Resources Staff	1993-??

4-8-93 jz

BLM SCIENCE

The Organizational Problem

Background

BLM currently has a number of issues to deal with related to its science activities:

1. Lack of overall science focus and coordination
   -Marginally effective AWP/budget system for science
   -Marginal science goal setting mechanisms
   -Marginal follow-up mechanisms for science
2. Need for consolidated "science needs" identification and presentation capability
3. Marginal communication between science activities
4. Need for improved tech transfer capability to bring science results to on-the-ground managers
5. Need to interface with important science organizations such as prospective National Biological Survey [NBS]
6. Need for improved science outreach

The BLM must be able to coordinate and facilitate science activities as well as have a focal point. With organizations that already "manage" science, BLM does not necessarily need another entity to manage science. Rather it needs some way of focusing and relating the varied activities of a variety of science organizations within BLM and in which BLM participates or anticipated participation, that include:

-Producers of Ecosystem Science information
-BLM Organization providers of Application Products
-Science Users who are Employees, and
-Science Users forming components of the Social System

There is a need to facilitate the flow of science through the pragmatic application stage to all science users; to link the needs of management science users to producers of ecosystem knowledge and transfer scientific products, through the BLM science organization, back to the users who are both BLM employees and users in other parts of the social system.

Whatever mechanism is developed to coordinate BLM science efforts, it must be able to work with the variety of BLM science entities based on what these entities missions are, the type of work involved in mission accomplishment, how flexible the entities are in being able to vary their focus and accept new assignments in rapid response to BLM needs, and the types of interactions with others typify the entities. It will have to be able to help these BLM science groups to relate to one another as well as relate their work and progress, their budgets and their products by assisting them to function within forums that relate to what they do and how they do it.

BLM SCIENCE ORGANIZATIONS & USERS

4-13-93 jz

ORGANIZATIONS

APPLICATIONS PRODUCTS

Western Wildlife Staff
[Fish/Wildlife advisory]
AZ T&E Staff
[T&E advisory]
DSC Resources Staff [B]
[Water advisory]
COOP-Oregon
[Veg.Diversity]
DSC Resources Staff [A]
[Hazmat advisory]
Phoenix Training Ctr.
[Training]
COOP-Oregon
[Old Growth Forests]
COOP-Idaho Raptor Center
[Raptor analysis]
Env.Sci.&Tech.Ctr.[Ft.Collins]
[Paired Ecosystems data]
Landscape Ecol.Model.Analysis
[Ecosystem Modeling]
Env.Sci.&Tech.Ctr.[Ft.Collins]
[Global Change analysis]
Terra Labs
[Ecosystem Modeling]
Env.Sci.&Tech.Ctr.[Ft.Collins]
[MIDAS]
DSC Resources Staff [C]
[Wildlife,Range,Mineral data]
Env.Sci.&Tech.Ctr.[Ft.Collins]
[Air Quality monitoring]
Env.Sci.&Tech.Ctr.[Ft.Collins]
[Wilderness monitoring]
E-MAP
[Monitoring]
RAWS [BIFC]
[Monitoring]

ECOSYSTEMS PRODUCERS SCIENCE

National Biological Suevey

Socio/Economic Science
[Ethnology]

Physical Science

EMPLOYEES USERS

BLM State Offices
[Ecosystem
Managers]

SACO
[Clearing
House]

SOCIAL SYSTEMS USERS

Other Agencies

Congress

Science Community

Public

4-13-93 jz

BLM SCIENCE GROUPS	FUNCTION	MISSION TYPE	MISSION FLEXIBILITY
AZ T&E Staff	T&E Wildlife advisory	Analysis	high
Western Wildlife Staff	Fish & Wildlife advisory	Analysis	high
DSC Resources Staff [A]	Hazmat advisory	Analysis	high
DSC Resources Staff [B]	Water advisory	Analysis	high
DSC Resources Staff [C]	Wildlife,Range,Mineral data	Monitoring	medium
Env.Sci.&Tech.Ctr.[Ft.Collins]	Paired Ecosystems data	Monitoring	medium
Env.Sci.&Tech.Ctr.[Ft.Collins]	Global Change analysis	Analysis	medium
Env.Sci.&Tech.Ctr.[Ft.Collins]	Wilderness monitoring	Monitoring	medium
Env.Sci.&Tech.Ctr.[Ft.Collins]	Air Quality monitoring	Monitoring	medium
Env.Sci.&Tech.Ctr.[Ft.Collins]	MIDAS	Monitoring	medium
COOP-Idaho Raptor Center	Raptor analysis	Analysis	low
COOP-Oregon	Old Growth Forestry/[Owls]	Analysis	low
COOP-Oregon	Veg.Diversity	Analysis	medium
Phoenix Training Ctr.	Training devel./presentation	Training	low
Terra Labs	Ecosystem Modeling	Analysis	low
Landscape Ecol.Model.Analysis	Ecosystem Modeling	Analysis	medium
E-MAP	Monitoring	Monitoring	low
RAWS [BIFC]	Monitoring	Monitoring	medium